How Much Student Loan Debt Is Too Much?

By Keith Greiner

Student loan debt may be too burdensome for some college graduates. This paper updates the definition of debt burden based on the perception of borrowers and on federal Department of Housing and Urban Development recommended debt level. The results of a survey of Iowa borrowers suggest that about 74% have manageable debt, while 26% have an excessive debt burden. Nevertheless only about 7% can be expected to default. Those with an excessive debt burden may not be in danger of default because of a variety of available repayment strategies.

There is a common perception that too many students accumulate excessive student loan debt. "Excessive" debt comes from either having too much debt or becoming underemployed after graduation.

Policy makers must determine how much debt is actually too much and how this level of debt affects students. Both issues are addressed here. The analysis is based on a 1990 survey conducted by the Iowa College Student Aid Commission (ICSAC). More than 2,000 persons responded to the 1990 survey conducted by ICSAC. Those who had either graduated or stopped attending a postsecondary institution were included in the survey.

This article is divided into four parts:

1. A review of relevant research by others;
2. An analysis of borrower perceptions of debt burdens;
3. An analysis of debt-to-income ratios; and
4. A synthesis of perception and ratio-based ideas into a universal model.

Research Review

Studies of student loan debt burdens are not new. Andre Daniere (1969) studied the subject using extrapolations from total income for a male cohort and concluded that a comfortable level of student loan debt was 7.5% of after-tax income. He assumed that average consumption was 90% of income. Daniere also found that the remaining 10% could be divided between life insurance, emergency funds of 2.5%, and a comfortable level of student loan repayment of 7.5% (1969, p. 578).

Robert W. Hartman's *Credit for College* reasoned that college graduates earned 27% more than high school graduates. This is based on a 1959 survey of "Northern and Western White, Non-Farm Males" (1971, p. 18). The study further assumed that two-thirds of that amount (18%) was attributable directly to a college education and that this 18% differential amounted to 15% of the individual's total income. Hartman reasoned that most of the income differentials could be used to pay college debt and concluded that the maximum loan debt for each family should be 15%.

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Hansen and Rhodes (1988) evaluated five definitions of manageable debt and proposed a level based on a study of discretionary

spending. Their study focused its definition of excessive debt on discretionary spending, including individual cash contributions, retirement, and insurance payments. By analyzing Bureau of Labor Statistics discretionary spending data, the authors arrived at three threshold levels of burden—10%, 12.2%, and 15% of income for starting salaries of $15,000, $20,000, and $25,000 respectively (p. 106). The article included a summary of studies of manageable student loan debt levels (see Table 1) along with the Hansen and Rhodes percentages. Hansen and Rhodes concluded that at the 15% level of debt fewer than 2% of the graduates had excessive debt (p. 108).

Greene's (1989) survey of Pennsylvania Stafford Loan borrowers reported that respondents with low incomes tend to be those who are most likely to have high debt ratios. According to the report, "Borrowers with incomes of $6,000 or more had 'manageable' debt levels, i.e., the portion of their annual income required to service their education loans fluctuating between 6.5% and 13.5%. Borrowers with annual incomes between $3,000 and $6,000 spent 19.4% of their annual incomes on education debt repayment, and those with incomes less than $3,000 spent an exceptionally high 68.8%. About 35.4% of all respondents were required to allot at least 10% of their incomes to education debt repayment, and about 25.8% were required to allot at least 15% (p. 38)."

A 1992 study conducted by Decision Resource Corporation and Westat, Inc. was based on 1977 and 1986 survey responses from four-year public and private college graduates (U.S. Department of Education, 1990). It did not include students at two-year schools, community colleges, or those who dropped out of postsecondary institutions. The study focused on the first year after graduation. A major contribution of this study is its emphasis on a standard debt ratio as a determinant of debt burden. The survey recognized that the ability to borrow for items like a home mortgage or an automobile is based on a ratio of debt payments to income. Once a certain ratio is exceeded, the purchase of a home or car is impeded, and the burden of the student loan is obvious. The study used a benchmark of 10% monthly payments to income. The 10% level was selected from a review of previous studies by Daniere (1969), who proposed a limit of 7.5% of after-tax income and Hansen and Rhodes (Hansen, 1988) who concluded that the limit

TABLE 1
Debt Burden Percentages Summarized by Hansen and Rhodes

GSL	9.1%
Daniere (1969)	6.4% (7.5% after tax)
Hartman (1971)	15.0%
Horch (1978, 1984)	
Low	5.7%
Intermediate	7.2%
High	9.0%
HEAF Financial Planning (1985)	37.0%
Hansen and Rhodes (1985)	
Income of $15,000	10.0%
Income of $20,000	12.2%
Income of $25,000	15.0%

should be between 10% and 15% of gross income. In the study, the median ratio of student loan payments to income was 4%. Only 6.5% of the respondents had a burden exceeding 10% of income in the first year after graduation. We may attribute the low impact of first-year burdens analyzed in the study to loan grace periods allowed during the first six months after graduation. The study focused on median debt levels because it was discovered that the mean burden was shifted to a value much larger than the median. The large mean shift was caused by some respondents having very large debt and/or very low incomes.

In March 1991, the New England Loan Marketing Corporation (Pedalino, 1991) reported on the student loan debt burdens of New England borrowers. By comparing responses to a 1991 survey with the same questions on a 1988 survey, the researchers reported that in 1991, borrowers were more likely to live apart from their parents, more likely to own (or be purchasing) a home or a car, and were more likely to have financed a new car purchase. This occurred although average student loan debt rose from $7,300 in 1988 to $8,200 in 1991. In the New England study, one of every four respondents perceived that their student loans caused more hardship than expected. The study found that respondents perceiving a hardship were those who had borrowed greater amounts.

"Debt Burden: The Next Generation," adds to the 1990 Decision Resource Corporation and Westat report (Westat, 1992). This report is derived from a 1991 Department of Education Recent College Graduate Survey. The authors estimated debt burden by using loan and income data collected in the survey. To estimate a ratio of debt to income, the authors calculated payments based on the assumption that all debt would have a ten-year maturity and would accrue interest at a Stafford Loan rate of 8%. By defining as excessive a debt burden that was 10% of total income, the report estimated that 8.3% of borrowers had excessive debt in 1990.

This percentage is quite different from those revealed by both the Pennsylvania study (Greene, 1989) and the ICSAC (1991) survey reported here. The differences are evaluated later in this article.

Borrower Perceptions of Loan Burdens

Borrower perceptions of loan burdens are important. They provide insight into the willingness of consumers (students and parents) to use the product (student loans) and to recommend the product to others. This was the focus of the New England study described earlier. In marketing, perception is important because it is the fundamental basis for consumer decision-making. Market researchers and educators Urban, Hauser, and Nikhilesh stated the notion succinctly when they wrote, "Consumers make decisions based on their perceptions of products" (Urban, et. al. 1987 p. 118). In applying this idea, we can anticipate that borrowers who indicate that their student loans are a hardship might be less willing to obtain further education by using debt financing. Behaviorally, the respondents would be weighing their choices of perceived hardship (burden) compared with the perceived reward (a degree). Those who perceive a greater hardship should be less likely

to pursue educational opportunities and more likely to seek non-debt assistance.

In the ICSAC survey, the perception of debt burdens was measured by evaluating responses to the statement "My student loans have caused me more financial hardship than I anticipated."

Slightly more than one-third (34%) indicated that their loans are a hardship. The percentage of perceived burdens is lower than that reported in the New England study (Pedalino, 1991). This is perhaps because of differences in survey respondents and the time that elapsed between the two surveys.

Table 2 shows the perception of burdens for several degree levels measured by the ICSAC survey.

Debt-to-Income Ratios

The second approach used by the ICSAC study was to consider debt burdens in the context of typical purchases. Here we ask whether the student loan debt is so large that it precludes acquiring further debt for the purchase of a home or car. The analysis focuses on burdens by using income and payment data without the natural bias of consumer perception.

This analysis begins with two standard debt levels. One is from the U.S. Department of Housing and Urban Development (HUD) and the other is from the Consumer Price Index.

HUD published a ratio-based mortgage guideline in 1989 as Mortgage Letter Number 89-25 (U.S. Department of Housing and Urban Development, 1989). This letter set the standard for the acquisition of a Federal Home Act loan. The letter stated that mortgage payments should not exceed 29% of the borrower's income. Total debt, including credit cards and recurring debt of six months or more, should not exceed 41% of income.

We can use this guideline to derive a standard level of non-mortgage debt at 12% (41% − 29% = 12%). The non-mortgage debt could include an automobile and credit cards as well as a student loan. If a car, credit cards, and student loans each took an equal share of the 12%, then each might account for about 4% of total income. Some individuals, of course, would have a higher share of debt in credit cards; others would have a higher share in a car; and still others would have a higher share in student loans. For the lack of better information,

TABLE 2
Percent of Respondents with Perceived Debt Burdens

	Burden	No Burden
Less than bachelor's degree	30.9%	69.1%
Bachelor's degree	33.4	66.6
Master's degree	26.9	73.1
Doctoral degree	41.9	58.1
Cosmetology and Other	29.4	70.6
Stopped for financial reasons	64.5	35.5
Stopped for other reasons	43.8	56.2
Total	**34.3%**	**65.7%**

we will use 4% as an appropriate share for student loans. We examine this assumption below.

The December 1991 Consumer Price Index for All Urban Consumers corroborates this 4% level of student loan debt (CPI-U) which placed the cost of educational services at 3.8% for urban consumers (U.S. Department of Labor, 1992). However, the CPI percentage includes families with no students in any kind of educational program. Therefore, it has a bias on the low side.

According to responses from the 1990 ICSAC survey, 55% of the respondents reported monthly student loan payments above 4% of monthly personal income. This suggests that either there is too much burden for the respondent, or the 12% debt level allowed by the HUD mortgage letter is not distributed equally among automobiles, credit cards, and student loans.

Some would argue that recent graduates should not expect to be able to purchase a home immediately. It may be reasonable to think that a level much more than 4% for student loan debt would be appropriate in the years soon after graduation. If the entire 12% were applied to student loan debt, then only 16% of the 1990 ICSAC survey respondents have had an excessive level of student loan debt.

We show the distribution of burden using this scenario in Table 3.

As a comparison, the Pennsylvania study reported that 35.4% of respondents had to allot at least 10% of their income to student loan repayment (Greene, 1989). The Iowa study (1991) found that only 18.9% did so. The Pennsylvania study reported that about 25.8% had to allot at least 15% of income while the Iowa study found only 13.2% did so. Differences may be due to the time of the studies, degrees pursued by respondents, economic conditions, and labor markets for graduates.

We also reviewed the differences between the 16.1% shown above and the 8.3% proposed by the 1993 Westat study. Those differences were primarily methodological in six categories. All six categories contributed to the possibility that the Westat study could be valid and still report a much lower percentage of persons experiencing debt burdens.

- The Westat study was based on the *1991 Survey of 1989-90 College Graduates* which was a Computer Assisted Telephone Interview

TABLE 3
Percent of Respondents Whose Loan Payments Were 12% or More of Income

	Burden	No Burden
Less than bachelor's degree	15.5%	84.5%
Bachelor's degree	13.5	86.5
Master's degree	12.1	87.9
Doctoral degree	13.2	86.8
Cosmetology and other	21.4	78.6
Stopped for financial reasons	26.2	73.8
Stopped for other reasons	25.9	74.1
Total	**16.1%**	**83.9%**

(CATI) using a four-month, post event recall. The direct-mail Iowa survey allowed time for respondents to provide accurate monthly loan payment amounts. Differences described here exemplify the differences between the two survey techniques.

- The Iowa survey requested both current debt information and monthly payment data. A preliminary review of the responses suggested greater reliability of responses using the monthly payment data. Therefore, we used monthly data for the analyses (see methodology discussion below). The Westat study was based on respondent recall of total debt characteristics and did not have access to monthly payment data (U. S. Department of Education, August 1991, page 36).
- The Westat study included only persons with bachelors' degrees. The ICSAC study, however, not only included persons with bachelor's degrees, but also those who stopped going to college, those with less than bachelor degrees, those with vocational degrees, and those with graduate degrees. The Westat study used an indirect, assumed, model to estimate the level of payments, while the ICSAC study asked specifically for monthly debt payments.
- The Westat study assumed that all respondents amortize loans over a ten-year period, while the ICSAC study measured payments by actual terms used at the time of the survey.
- The Westat study assumed that all loans were repaid at the Stafford rate of 8%, while the ICSAC study included whatever mix of loans was actually in force. This could include Perkins loans that generally have a lower rate than Stafford, and PLUS, SLS, and private loans which may have a higher rate than Stafford.
- The Westat study reported a higher income for first-year college graduates than the ICSAC study reported for all persons surveyed. An analysis of incomes from the ICSAC survey (ICSAC unpublished data, 1994) found that graduates who were not living in Iowa had significantly higher incomes than those living in Iowa. It is possible, therefore, that a general survey of persons not living in the state would report larger incomes than a survey primarily made of respondents living in Iowa.

Survey Methodology: Collecting Monthly Payment vs. Total Debt Data

Studies show that people who are applying for loans are more likely to recall and understand the impact of monthly payments on their loan rather than the impact of the total loan size. Therefore, the Iowa loan study anticipated the possibility that some individuals could recall monthly payments while being unable accurately to recall total current debt. So the survey asked individuals to list their current debt and their current monthly payments for student loans, automobiles, motorcycles, home mortgages, charge accounts, credit cards, and "other" debt. We show responses from those indicating some form of debt below.

Clearly, a survey that excluded persons who could only recall monthly payments would exclude up to 16.8% of the possible responses in the survey results. By examining only total education loans outstand-

TABLE 4
Persons Reporting Current Total Debt, Current Monthly Loan Payment, and Both

	Number	Percent
Current Debt	179	3.3%
Current Monthly Payments	905	16.8
Current Debt and Payments	4,295	79.9
Total	**5,379**	**100.0%**

TABLE 5
Percentages of Respondents with 12% of Income or Greater Debt Burdens and Respondents with Perceived Debt Burdens

	Burden	No Burden
Less than bachelor's degree	28.4%	71.6%
Bachelor's degree	28.6	71.4
Master's degree	28.6	71.4
Doctoral degree	29.0	71.0
Cosmetology and other	36.8	63.2
Stopped for financial reasons	30.4	69.6
Stopped for other reasons	30.4	69.6
Total	**29.7%**	**70.3%**

ing without considering the monthly payments reported by respondents, the 1991 Westat study may have understated the debt attributed to student loan borrowing.

Linking Perception with Debt-to Income Ratios

To evaluate the relationship between the debt burden ratios of all respondents and the perceptions of respondents claiming debt burdens, we calculated the debt-to-income ratios including only respondents who said their loans caused more financial hardship than anticipated. We show the distribution in Table 5.

We might wonder why the ratio-based calculation of those with perceived burden is similar to ratio-based calculations including all respondents. That is, why do 70% have an actual burden of less than 12% of their income? Where is the appropriate level of needed debt burdens?

This analysis has thus far used two approaches to determining debt burdens, a perception approach and a ratio-based approach. We have divided the ratio-based approach into two sections—one section described all survey respondents who listed their student debt; the second section reviewed how those with perceived excess burdens fared under the ratio-based definitions of need. We summarize both approaches in Table 6.

We used an analysis of the variance to compare distributions in Tables 2, 3, 5, and 7. The resulting F values showed significant patterns for methodology ($p < .05$) and for degrees ($p < 0.0$).

An important study purpose was to determine the percentage of income at which student loan payments become a burden. Clearly, at

TABLE 6
Summary Percentages of Persons with Debt Burdens

	Burden	No Burden
Perception-Based Definition		
All Respondents	34.3%	65.7%
Ratio-Based Definition		
Four Percent Ratio Cut Off Burden Threshold		
All Respondents	54.7%	45.3%
Respondents with Perceived Burden	78.3%	21.7%
Twelve Percent Ratio Cut Off Burden Threshold		
All Respondents	17.2%	82.8%
Respondents with Perceived Burden	29.7%	70.3%

TABLE 7
Percentages of Respondents with Ratio-Based Debt Burdens Of 8% of Income or Greater

	Burden	No Burden
Less than bachelor's degree	24.7%	73.5%
Bachelor's degree	25.6	74.4
Master's degree	22.7	77.3
Doctoral degree	19.7	80.3
Cosmetology and other	31.2	68.8
Stopped for financial reasons	36.5	64.5
Stopped for other reasons	29.6	70.4
Total	**26.1%**	**73.9%**

any ratio, some graduates will have too much debt and will have difficulty repaying their loans. If the determination is ultimately to be based on client experience, we should use the percent of persons with perceived burdens as our guide. This would place the ratio somewhere between 4% and 12%, because 65.7% (the perceived amount) is about halfway between the 4% ratio-based threshold and the 12% ratio-based threshold for all respondents. (For example, the mid point between 45.3% and 82.8% in Table 6 is 64.1%.) Then we may estimate that the most appropriate ratio is also halfway between the two ratio-based definition extremes in Table 6 at 8%. Therefore, by taking a totally different approach and methodology, we have arrived at a debt burden level of 8%. This is consistent with Daniere's acceptable debt level of 7.5% (1969, p. 578).

Future research may confirm this estimate. Our intention was to resurvey a similar sample from the same database in the fall of 1995. We hope that the survey will replicate the 1990 survey results. Until then, we show the most likely percentage of respondents with excessive debt burdens in Table 7.

Table 7 also shows that 74% of the survey respondents could be considered to have manageable debt, and that 26% could be considered

to have an excessive debt burden. Is that 26% too much? Although the borrowers experience excessive debt by this definition, that does not mean that all are in danger of default. A former student can reduce debt burdens by taking advantage of deferments, forbearance, negotiated payments, and family assistance.

Changes in the federal approach to repayment will mean that many hardship cases (such as a person with sub-standard income for 25 years) can eventually be relieved of all burden. Still, some may work very hard on their family budget to help repay their loans and avoid the possibility of a bad credit rating caused by default. Others may rely on the income of a spouse or other family members to repay their loans. Still others may take a job that is not in the field for which they were trained. That 26% may face an excessive debt burden level means that they may have to forego other economic purchases and plans to repay their student debt. Although 26% of the respondents experienced debt burdens, only 7.2% actually defaulted. Future research could be designed to learn more about the relationship between the perception of burdens, ratio-based calculated burdens, and borrower's default experiences.

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